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First Results from the Infrared-Selected SPICES Survey

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Abstract

We present the first results from SPICES, the Spectroscopic Photometric Infrared-Chosen Extragalactic Survey. Our survey is designed to study galaxy formation and evolution out to $z \approx 2$. We have deep ground-based $BRIzJK$ imaging covering 100 square arcminutes split into four fields across the sky. Optical images reach depths of ≈ 25 mag (AB; 3σ). The infrared images reach ≈ 23 mag (AB; 3σ). We are pursuing spectroscopy of the $K < 20$ (Vega) sample: we currently have ≈ 500 redshifts from the Keck telescopes. The spectroscopic sample is being used to train photometric redshifts for the complete sample. We discuss preliminary results from this survey, including the surface density and nature of extremely red objects. We detail optical/near-infrared identifications of X-ray sources identified from a deep, 190 ks observation of one field with the Advanced CCD Imaging Spectrometer on the *Chandra X-Ray Observatory*. We discuss identification fraction, properties, *Hubble Space Telescope* morphologies, and spectroscopic follow-up of these X-ray sources.

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